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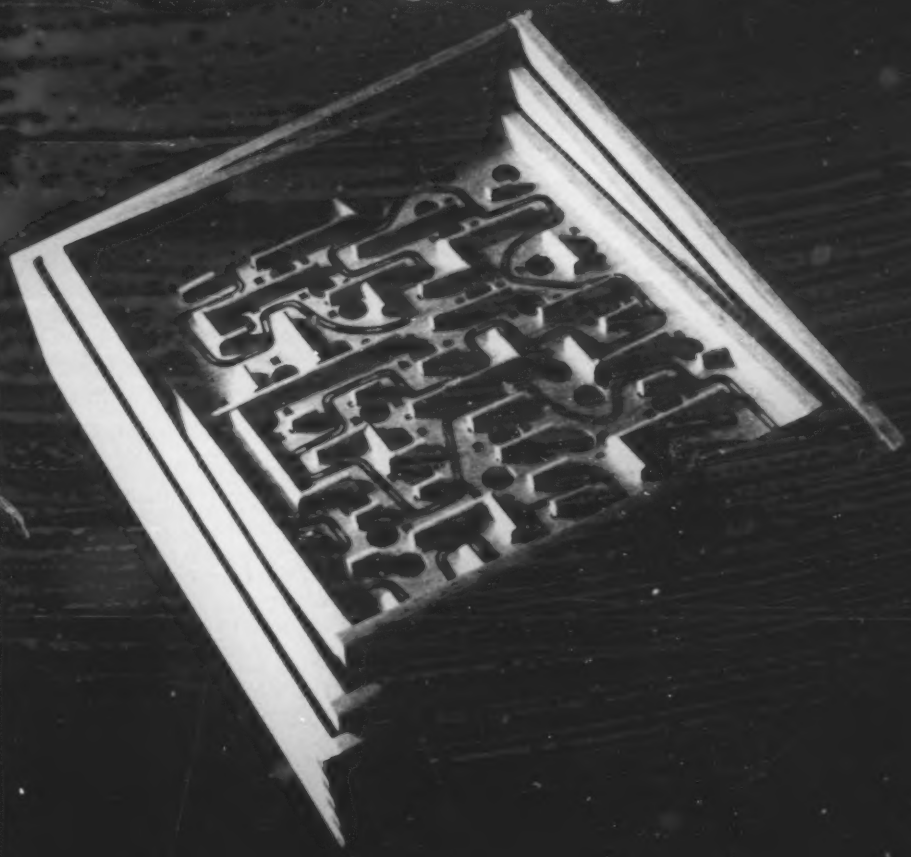
Paths to Quality



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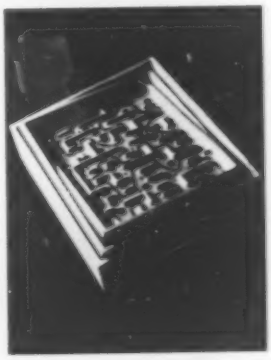
CONTENTS

Cover Story

Paths to Quality in Nursing Education



Two of this month's authors delve into the dimensions of quality nursing education. M. Louise Fitzpatrick examines ways to offset threats to quality; Robert P. Heaney argues that standards of quality do not guarantee excellence.
Pages 212 and 218.

Features

222

Student Education in Service Agencies

The authors report the results of their study to find out whether nursing schools and service agencies exchange resources equitably.

Patty L. Hawken
E. Ann Hillestad

232

Sampling Nursing Time

The authors' findings in a study of how nurses spend their time have helped their organization better determine staffing needs.

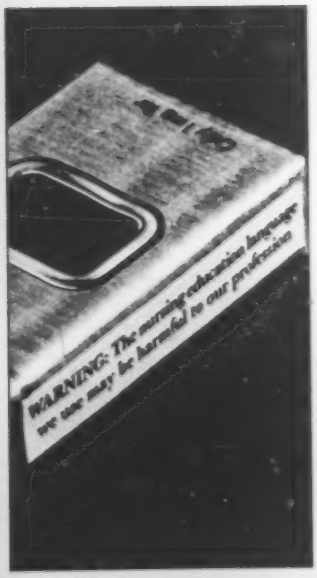
Terry R. Misener
A. J. Frelin
Patricia A. Twist

238

Burnout and Alcoholism

Nursing students are at risk for burnout and alcohol abuse, concludes the author, and educators should take steps to prevent and treat those dysfunctions.

Mary R. Haack



228

Harmful Language

The language of nursing education is incompatible with that of higher education, say the authors, and changing it will enhance nursing's credibility on campuses.

Sylvia E. Hart
Theresa G. Sharp

Departments

207 Guest Editorial
209 In My Opinion
243 NLN Perspective
247 Proposed Resolutions
248 News
251 Washington Focus
253 Accredited AD Programs
258 NLN Calendar
259 Classified

NURSING & HEALTH CARE offers diverse views on subjects of interest to readers. Articles represent the opinions of individual contributing authors and are not necessarily those of the National League for Nursing.

Weighing the Costs and the Benefits of Student Education to Service Agencies

PATTY L. HAWKEN
E. ANN HILLESTAD

In the not-so-distant past, hospitals had waiting lists of nurses seeking employment. They also had decreased financial resources as a result of prospective payment and fewer patient days. Hospital administrators were looking for added sources of revenue. With full nursing staffs, some hospital administrators determined that accommodating nursing students was costly, and they considered charging schools of nursing for placing students in their institutions for patient-care experience. The basis of this charge would be from a perceived cost to the institution, not from documented findings.

During this same period of time, nursing school administrators were experiencing a decrease in fiscal resources to accomplish their educational mission and were unwilling or unable to reimburse service agencies for student clinical experience. However, nurse educators did not have data to indicate the cost-to-benefit ratio of their services to the service institutions—and to justify their unwillingness to reimburse service agencies.

The question was then raised regarding equity in the exchange of nursing student services in addition to paying for the privilege of giving these services. Specifically, is there an equitable exchange of resources between nursing education programs and service agencies that cooperate in educating nursing students?

To answer this question, we devised a cost-to-benefit analysis study to determine both the costs incurred and the benefits contributed by baccalaureate and master's students who care for patients. We determined that the student, the school, the nursing staff, and the hospital contribute two types of activities and benefits. The first are tangible activities such as providing physical care for patients, recording information on charts, and talking with families, all of which the students contribute. Tangible items that the hospital and the nursing staff contribute include time for orientation, answering questions, and the use of conference space. The intangible benefits resulting from having students in the hospital include the opportunity to recruit them after they graduate and the prestige that being associated with a university provides. The intangible contributions the hospital makes to the school include staff nurse expertise, interaction with physicians and other hospital personnel, and feedback and evaluation from hospital personnel.

The specific questions addressed in this study were:

- What are the tangible and intangible resources exchanged between baccalaureate and higher degree schools of nursing and service agencies?
- Is the exchange of these resources between the two organizations equitable?

Many early articles dealt with the cost of hospital-based schools of nursing [1–6]. These authors highlighted program costs, tuition, and room and board costs, and compared them against a beginning staff nurse salary. Some researchers found that clinical student nurses were costly to hospitals. Others indicated student nurses were cost effective and a benefit to hospitals.

More recently, authors have discussed the need for cost analysis of nursing student experience [7–8]. None of them have addressed the costs incurred or benefits accrued as a result of the clinical experience of students. No one has documented the intangible benefits of clinical nursing experience. The need for a cost-to-benefit analysis of nursing student education to service agencies was evident.

We based the study on the Resource-Exchange paradigm explained by Walter Nord [9]. The paradigm is based on the idea that social interactions are the fundamental aspects of resource exchange. The exchange occurs between individuals, individuals and groups, individuals and organizations, groups and organizations, and between organizations. In exchanges between organizations, the resources involved are those that help them achieve their goals. The relationship

Patty Hawken, PhD, RN, is dean and professor at The University of Texas Health Science Center at San Antonio School of Nursing. Ann Hillestad, PhD, RN, is an assistant professor there and a former nursing service administrator. Special thanks to Sara Draper, MSN, RN, research associate, who participated in data collection.

Table 1. Importance of Tangible Resources — in School of Nursing and Clinical Facility. Number of Staff/Faculty Responding in Each Category

Tangible Resources	School of Nursing Minimally Important	Somewhat Important	Moderately Imporant	Important	Very Important
Physical care	–	–	–	4	9
Patient education	–	–	–	1	12
Emotional support					
Patient	–	–	–	3	10
Family	–	–	1	5	7
Patient conferences	–	–	5	6	2
Specific topic conferences	–	–	7	6	–
Resource materials*	1	3	4	3	1
Health science center resources	2	1	7	2	1
Consultation/inservice	2	–	2	8	1

Tangible Resources	Clinical Facility Minimally Important	Somewhat Important	Moderately Important	Important	Very Important
Head nurse/clinical nurse specialist time	1	–	1	3	8
Staff time	–	–	–	–	13
Supplies	1	1	3	3	5
Equipment	5	2	2	1	3
Unit space	–	1	1	5	6
Facility space	–	2	1	5	5
Resource materials*	–	1	3	5	3
In service	–	4	3	2	4
Miscellaneous	2	2	3	5	1

*One person did not answer

between organizations is balanced and satisfactory to both when each are receiving those resources they value in a quantity they judge appropriate. For the organizations to survive and grow, equilibrium between the resources needed and obtained and those dispersed must be achieved. If members of either group think there is disequilibrium, they may try to alter the relationship.

The costs and benefits can be viewed as resources that the service agency and the nursing school need, and the other agency has. The relationship between the two organizations is satisfactory to both when each sees that the exchange is equitable.

We designed the study to first determine the tangible and intangible items that were exchanged by the school of nursing and the hospitals. We defined tangible items as resources that could be appraised in terms of actual or potential value. Four-by-four gauze dressings are examples of tangible items. Intangible resources included those that are nonmaterial or nonphysical, such as good will.

First we had to develop a list of all tangible and intangible resources with the help of nurses familiar with nursing care in institutions and nurses working with students. We would use the list of tangible resources as a basis for directly observing students in the hospital to determine if they used these resources. Since intangible resources cannot be observed, we decided to compile a questionnaire regarding intangible resources to send to faculty members, staff nurses, directors of nursing, and hospital administrators.

The school of nursing involved in the study is a publicly supported school in a health science center. It enrolls undergraduate students in their junior year, students with nursing backgrounds, and nurses with diplomas or associate degrees. The school also has a master's in nursing program. The hospitals involved were a large veteran's hospital, a military hospital, a county hospital, and two for-profit hospitals.

The initial step in designing a questionnaire was to compile a list of tangible and intangible resources. We interviewed three head nurses and three faculty members. The head nurses were from three different hospitals and three different services—intensive care, surgical, and maternity. The three faculty members were from the school of nursing and were teaching three levels of students—graduate, beginning undergraduate, and graduating seniors. The faculty members' specialty areas were medical, gerontology, and intensive care.

On the questionnaire, we briefly explained the purpose of the interview and the concepts of tangible and intangible resources, and we asked these questions:

- What do you believe are the tangible and intangible benefits of having students on a patient care unit?
- What do you believe is the cost of having students on a patient care unit?
- What are the benefits of having faculty on a patient care unit?

From the responses, we developed lists of tangible and intangible resources potentially involved in the resource exchange.

Next we sent the lists of tangible and intangible resources to a group of hospital nurses and a group of faculty members. The hospital staff nurses had been with the students during the 1986 spring semester and the faculty members had supervised students in clinical settings during the spring semester but would not be doing so in the subsequent semester. We chose these individuals to help refine the lists of items; they would not be the individuals we would observe with students later. We mailed 32 questionnaires; 15 were returned and 13 were usable. We had asked the faculty members and the staff nurses to add items to both the lists, to mark items they believed should be omitted, and to rank the items.

Analysis of the results indicated that none of the items on either list should be omitted (see Tables 1 and 2). Each item was further defined. For instance, physical care was defined as physical care of patients that necessitated such "hands-on care" as bathing, providing wound care, and taking vital signs. The area of documentation was added to the tangible resource list for the school of nursing. Documentation was a broad category that included charting and completing forms. This was the only item added to the lists.

Before collecting any data, we received permission from the nursing administrators of each of the five institutions we had selected. We also obtained the approval of the university's Institutional Review Board.

To determine the exchange of tangible resources, we hired a research associate to observe students during their clinical practice time. The observations were limited to five medical-surgical courses offered in the fall of 1986. Two courses were in the graduate program, one was offered for junior-year baccalaureate students, one for graduating seniors, and one for nurses in our baccalaureate completion program. We decided to restrict observations to medical-surgical areas since other clinical areas provided vastly different experiences.

We selected the sample by using a table of random numbers. Two medical-surgical faculty members and six students were randomly selected from the junior year, senior year, completion program, and graduate nursing courses. Each faculty member and student was given the option to choose whether or not to participate and anonymity in reporting data was assured.

The research associate observed every student and faculty member for 10 minutes every hour during two six- or eight-hour days. She divided the courses so she was observing one faculty member and three students every hour each day. She noted on a prepared form exactly what each person

Table 2. Importance of Intangible Resources in School of Nursing and Clinical Facility. Number of Staff/Faculty Responding in Each Category

Intangible Resources	School of Nursing: Minimally Important	Somewhat Important	Moderately Important	Important	Very Important
Prestige*	2	4	4	2	–
Recruitment (Others)	1	2	6	4	–
Recruitment pool (Students)	–	2	5	5	1
Job enrichment	–	–	2	7	4
Maintaining nursing skills	–	–	1	2	10
Encourages analysis of care	–	1	–	1	11
Stimulates continued learning	–	–	1	3	9

Intangible Resources	Clinical Facility: Minimally Important	Somewhat Important	Moderately Important	Important	Very Important
Provide nursing care	–	–	–	–	12
Staff knowledge and skill*	–	–	–	–	12
Interaction with physicians*	–	–	1	4	7
Interaction with personnel*	–	–	–	5	7
Evaluation and feedback*	–	–	1	5	6
Organizational experience*	–	1	2	4	5
Potential students*	2	–	7	2	1

*One person did not answer

was doing, what supplies were used, which staff members were involved, and the general conversation taking place. She also noted the exact number of minutes for every activity.

We did a pilot study to ascertain the feasibility of the data gathering procedure—whether or not we could find participants, note supplies, and capture conversations. One of us and the research associate observed students and faculty members who were not in the main project for two full clinical days. We achieved consensual validation and decided to make very specific notations. For instance, instead of saying "dressing changed," the researcher listed the actual number and amount of supplies.

The research associate reported few problems during the observation stage. Several students appeared anxious about being observed initially but soon became absorbed in their learning activites and accepted the observer as part of the environment.

We compiled a questionnaire of intangible resources. There were two lists of those—one contributed by the school and one by the hospital. We included a five-point Likert response scale as well as a demographic sheet and mailed the questionnaires to the hospital administrators and nursing service directors of the five hospitals used. We also gave questionnaires to the staff nurses on the units where students were obtaining their clinical experience and to the faculty members who were working with students.

Results of the intangible resources exchanged is in final analysis and will be reported in the May issue of *Nursing & Health Care*.

We placed the observations of tangible resources in the appropriate category on the list of tangible resources and recorded them in minutes. We then costed out the total number of minutes for each category to yield the dollar value of the resources used in each category and in each course. We determined costs by using the actual cost of supplies. We used the average salary for a licensed vocational nurse to calculate the cost of the junior year students' contributions; we equated senior year and completion students' contributions to a beginning staff nurse salary; and we determined graduate nursing

Table 3. Tangible Resources for Hospital and School of Nursing

Hospital

	Undergraduate		Degree	Graduate		
	Sem. I	Sem. IV	Completion	M.S. I	C.C. III	Total
Students/Faculty	84/11	62/8	21/3	7/2	7/2	–
Resources						
Head nurse/Clinical nurse specialist time	$ 531	$ 1,898	$1,123	$ 520	$1,587	$ 5,659
Staff time						
RN	4,398	7,496	204	622	124	12,844
LVN/LPN	668	138	50	–	–	856
Nurses aide	–	–	5	–	–	5
Unit secretary	–	45	26	8	–	79
Supplies	1,035	139	11	–	–	1,185
Space	5,513	2,916	410	–	–	8,839
Miscellaneous	235		94			329
Total costs	$12,380	$12,632	$1,923	$1,150	$1,711	$29,796

School

	Undergraduate		Degree	Graduate		
	Sem. I	Sem. IV	Completion	M.S. I	C.C. III	Total
Students/Faculty	84/11	62/8	21/3	7/2	7/2	–
Resources						
Physical care	$24,652	$24,125	$2,190	$359	$236	$51,562
Patient education	2,706	1,717	220	123	–	4,766
Emotional support						
patient	839	478	41	–	–	1,358
family	411	64	41	–	50	566
Documentation	4,159	5,363	513	96	–	10,131
Conferences	–	–	–	137	–	137
Total costs	$32,767	$31,747	$3,005	$715	$286	$68,520

students' contributions by using the average of experienced staff nurse salaries. We costed out hospital staff time using the local average salary for each staff nurse level.

We costed out space by dividing space into unit space and facility space. We defined unit space as unscheduled space used as coffee rooms or conference rooms available for general use. Facility space referred to scheduled classroom or conference areas. We only costed out facility space. Post-clinical conferences were held in facility space. The monetary value associated with facility space was an average of the amounts charged by three for-profit facilities for the use of their conference rooms and three non-profit facilities for the amount calculated as their contribution to the community when outside groups used the space.

We did not cost out the use of the health science center library by hospital staff or the use of printed or written resource materials belonging to the hospital and used by many people, such as patients' hospital records used for data gathering and procedure and reference books.

The research associate did not observe all of the items on the tangible lists being used. For instance, she did not observe faculty engaged in consultation activities. The monetary value of each category observed was calculated and the value for all students and faculty in the five medical-surgical courses was extrapolated (see Table 3).

Results

The results of this project indicate that the nursing school contributes more than twice as much of tangible resources to the exchange as the clinical facilities contribute. The research associate observed an actual total of 855.5 minutes of "hands-on" patient care; extended to all 181 students in the five medical-surgical courses for the semester, this figure becomes over 4,700 hours of care. Although the hospital staff retains responsibility for patients' care and students are not there to staff, these hours of care make a valuable contribution, especially in light of a nursing shortage. In three of the courses in this study, the students spent six hours per day performing clinical activities, and in the other two courses they spent eight hours per day doing clinical work. Those are sizable blocks of time during which staff could be allowed time to provide more comprehensive care, to participate in staff development activities, or to take part in such departmental activities as quality assurance.

The question of whether or not students use more supplies than experienced staff has long been an issue between nursing service and education. The results of this project indicate that they use a small number of additional supplies, but the cost of the extra supplies observed being used in the study extended to all 181 students in the five medical-surgical courses throughout the semester was less than $1,200.

Graduate students contributed a smaller proportion and consumed a larger proportion of resources than undergraduate students and faculty members. Although students in the two graduate courses represented only 8.7 percent of the total number of students in the five courses and their clinical time was only 5.8 percent of the total, they consumed 32 percent of the staff time, mostly in the head nurse/clinical nurse specialist category. Graduate students talked with head nurses to gather data for projects and to discuss implementation of activities. The monetary value of their contributions to the exchange of resources was only 1.5 percent of the total contribution made by the school; they used 9.6 percent of the contribution made by the hospitals.

It may be that this method of observing the exchange of tangible resources involving graduate students is not appropriate. Their course objectives are not met by providing "hands-on" care and the majority of their contributions are made by completing and presenting projects useful to the clinical units and their staff. That part of the exchange would only be observed in the closing weeks of the semester and was not observed in this study. One faculty member who, along with others, had supervised 15 students in a graduate medical-surgical course costed out the value of their products from the viewpoint of providing consultation to the units and staff and projected a value of $10,000, just for the time involved in consulting and presenting findings of their projects.

This study indicated the school of nursing contributes more than twice as much in relation to tangible resources as the hospital. This is only as it relates to five courses focusing on medical-surgical nursing. The study also demonstrated that nursing students use only a small amount of additional supplies. In fact, given the same circumstances, staff nurses might have used similar amounts. The study further indicated that graduate-student contributions should be calculated on a different basis. Using consultation costs seems to be a clearer reflection of activity.

Plans

Future plans include analyzing the intangible resources and reporting the findings in the next issue of *Nursing & Health Care*. Additional studies should be done in other clinical areas in the hospital as well as replication of the present study. The model used should be refined and replicated.

Cost-to-benefit analysis studies are helpful to administrators to clearly determine costs incurred and received in relation to nursing student education. The present study clearly indicates a significant contribution of nursing students to the health care facilities and patients.

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Sampling Nursing Time Pinpoints Staffing Needs

TERRY R. MISENER
A.J. FRELIN
PATRICIA A. TWIST

Today as never before, nurses are under the gun to document resource expenditures, particularly personnel requirements. Economic belt-tightening has heightened the pressure that hospitals have always exerted on nursing departments to justify spending. Nurse managers can no longer appeal to administrators with subjective cries about patients' needs. We must have hard data with which to enter the combat arena of resource allocation. If we need more nursing resources to provide safe, high-quality patient care, we must be able to document those requirements with data gathered using sound methods based on valid and reliable measurement tools.

Because the Army Nurse Corps (ANC) was convinced that the patient classification system and patient census they were using were inadequate for determining staffing needs, we decided to study precisely how nursing personnel in army facilities spent their time. We began by looking into the work others had done in this area.

In 1981, Sherrod and her colleagues undertook an extensive study to measure direct nursing care requirements objectively. They documented how much time all levels of nursing personnel needed to perform 357 nursing tasks [1]. They defined direct patient care as "All care given by nursing personnel in the presence of patients; those nursing activities that are carried out with or without the patient, are behavioral in nature, and are observable [2]." Based on the results of the study, Sherrod developed and translated standard times into a patient classification system for six major inpatient clinical areas: medical-surgical, intensive care, psychiatry, obstetrics, pediatrics, and neonatal units. Giovanetti has credited Sherrod with developing the most comprehensive and best documented task list [3]. In addition to the patient classification system, Sherrod developed staffing-mix ratios for each nursing area that reflect the levels of personnel actually observed providing direct patient care. Sherrod studied only direct patient care requirements, but she realized that a comprehensive staffing system required quantifying indirect care requirements and times that nursing personnel were unavailable to render patient care.

In 1982, Lake used work sampling to document the percentages of time spent in nursing activities in community hospitals [4]. He reported that nursing personnel spent between 28 and 35 percent of their time providing direct patient care and between 50 and 62 percent of their time doing indirect care. His subjects were involved in personal activities or unavailable between 10 and 15 percent of the time. Lake broke indirect care into an indirect care category, which included charting, communicating about patients, preparing medications, and transcribing orders, and into a unit-related category, which included housekeeping, clerical work, communicating with others, doing errands, attending meetings, and acquiring supplies.

Veterans Administration (VA) researchers reported in 1983 that nursing personnel working in medical-surgical units spent between 38 and 45 percent of their time providing direct care and between 37 and 49 percent of their time on indirect care. Between 13 and 18 percent of their time was personal time [5]. The VA investigators counted time waiting to provide care under personal time, which we considered a misclassification.

Because of the differences in definitions used by Lake and the VA vis-a-vis the Sherrod study, the ANC decided to gather data about indirect care and unavailable-for-care times in our own settings. We defined indirect care activities as those tasks performed away

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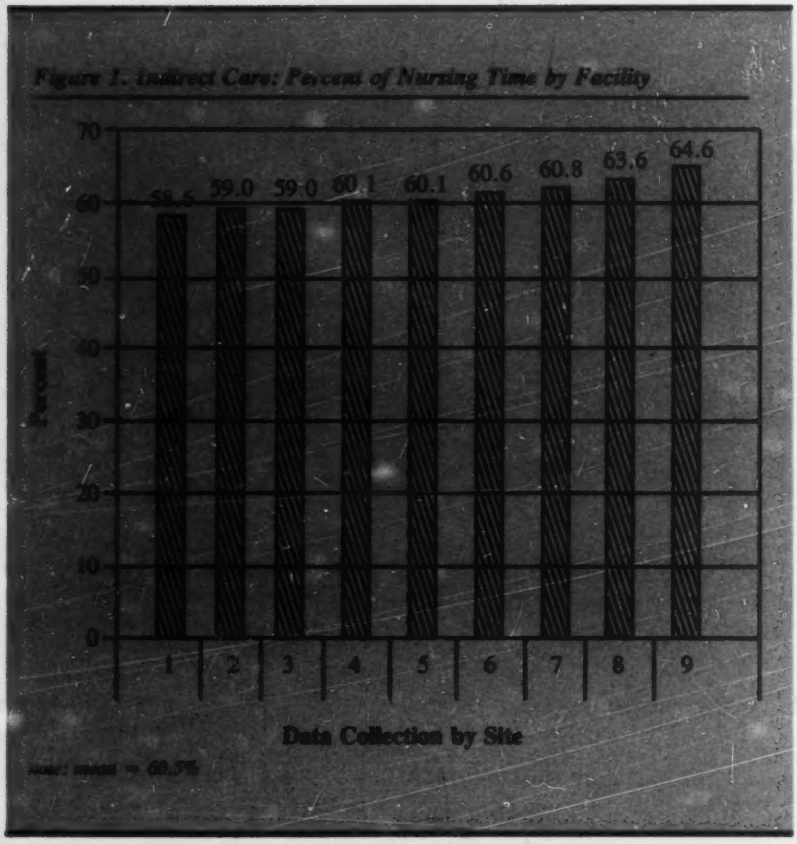
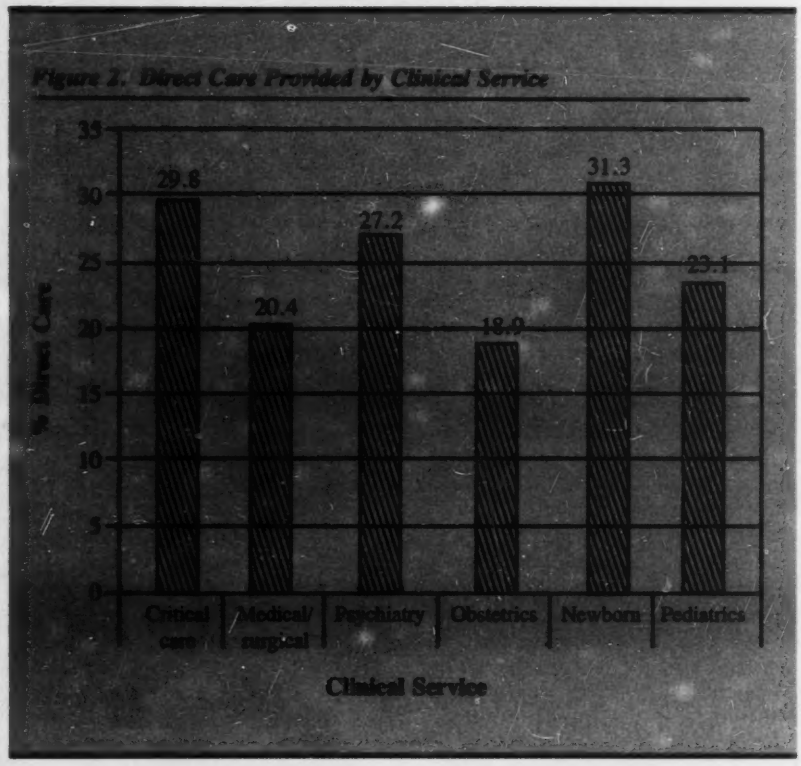




from the patient, and we divided them into the following eight subcategories: communications including patient conferences; assessing patients' needs and planning their care; preparing medications, supplies and equipment; travel and transportation; ward administration; housekeeping; and waiting time. Unavailable-for-care times included those activities not directed toward patient care or unit management that detract from time available for patient care. We divided the unavailable-for-care category into an on-the-unit activity component and an off-the-unit activity component. Many off-the-unit activities were unique to the military, such as field training exercises and participating in parades.

Our objectives for the study were to determine the percentage of time hospital nursing personnel spent providing direct care and doing indirect care, as well as the percentage of time they were unavailable for care; to compare the percentage of time nursing personnel in all of the facilities we surveyed spent on the activities in each category; and to compare the time various types of nursing personnel spent on the activities in each category within and among facilities.

We chose nine study sites within the U.S. Army Health Services Command that provided a representative mix of medical treatment facilities by size, nursing unit configuration, and the type of military post supported. The chiefs of the nursing departments at each facility provided us with lists of all inpatient nursing units divided into the six clinical services of interest, points of contact, and the names of between two and seven nurses whom we would train to collect data at their sites.

Our basic method for collecting data was work sampling, which entails collecting data at predetermined intervals, then, based on sampling theory, extrapolating the findings over the entire monitored period of time [6]. We modified the U.S. Public Health Service Division of Nursing "San Joaquin Study" to develop a data collection tool [7]. The modifications included changing the working definitions and expanding the off-the-unit and unavailable-for-care activities to be more responsive to Army practices and needs. We pilot tested data collection forms at one large Army medical center to check validity and assure that our def-

Figure 3. Indirect Care Provided by Clinical Service

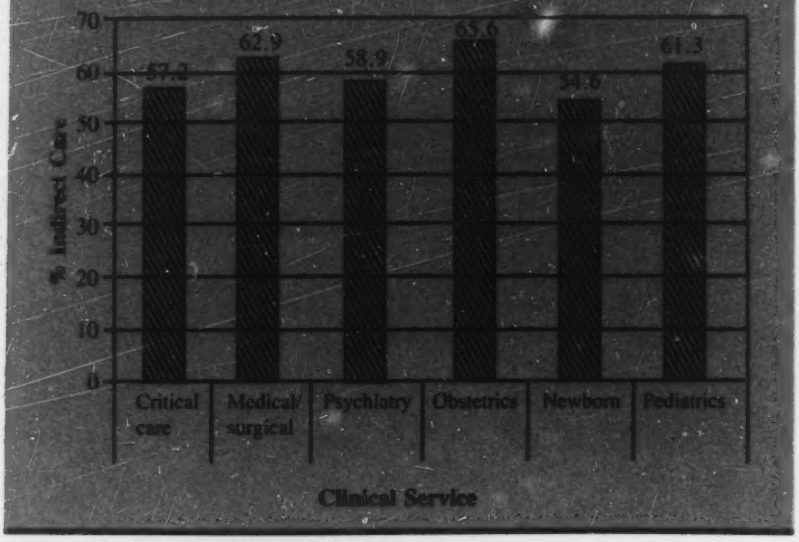


Figure 4. Unavailable for Care by Clinical Service

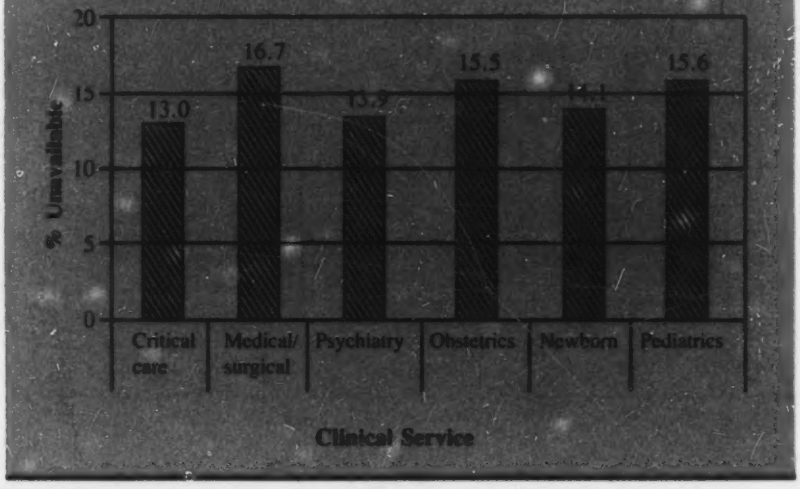


Table 1. Mean Percentage for all Shifts and Services by Shifts

Type of Care	Day	Evening	Night	Composite
Direct	22.1	30.3	26.1	24.5
Indirect	59.9	56.9	69.8	60.5
Unavailable for care	17.9	12.8	4.1	15.0

initions encompassed all of the nursing tasks and time allocations. The pilot test also gave us an opportunity to carry out interrater reliability measurements. To insure ease of use and clear definitions, we made minor modifications in the instrument.

To maximize scientific rigor, we used a civilian consultant with knowledge and experience in training and carrying out a work sampling study to review the protocol and to train study staff in the method. We and the consultant trained the data collectors at their own facilities. As a part of the didactic orientation, we gave data collectors two written tests to increase reliability in the classification of activities. Further training included two periods on a typical nursing unit, allowing data collectors to become familiar with the instrument and to insure virtually 100 percent interrater reliability.

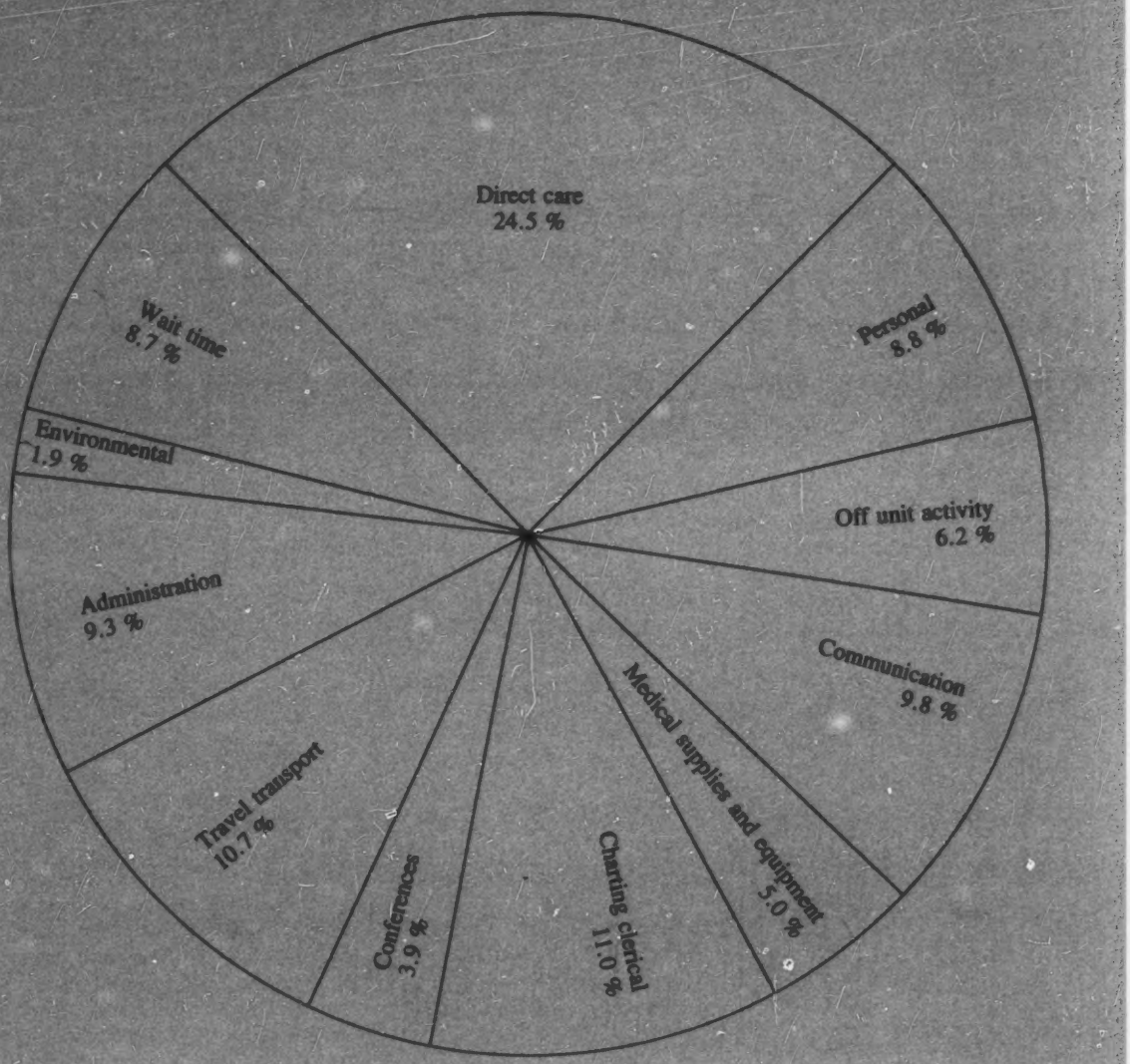
Using a table of random numbers, we selected nursing units from within each clinical service at each site in which to collect data. We assigned data collectors to gather data on randomly selected days and shifts for two weeks on ten, eight-hour shifts for each of the six services, randomly selecting five days, three evenings, and two nights.

The data collectors recorded the time nurses spent in each of 11 activity categories at 10-minute intervals during the eight-hour shifts. They documented the first task they observed the monitored person performing. During training, we taught the data collectors to begin monitoring at random points on the nursing unit, travel on varied routes, and begin their observations at random times for each observed segment. Although reactivity was a potential threat, we assured personnel that we would not evaluate them individually when we aggregated data. Staff members quickly adjusted to the observers, who did not feel that behaviors changed because of their observations.

The observers completed a single data collection form each hour on each of the observed nursing units. At the end of the data collection period, they forwarded their forms to the study office along with a time schedule for the assigned personnel on each nursing unit observed.

We collected all of the data during two months. The work sampling provided 107,700 10-minute segments of

Figure 5. Percentage of Time Spent by Nursing Personnel in 11 Activities Across Facilities



monitored time equating to 461 eight-hour shifts or 17,817 hours of nursing time across all nine study sites.

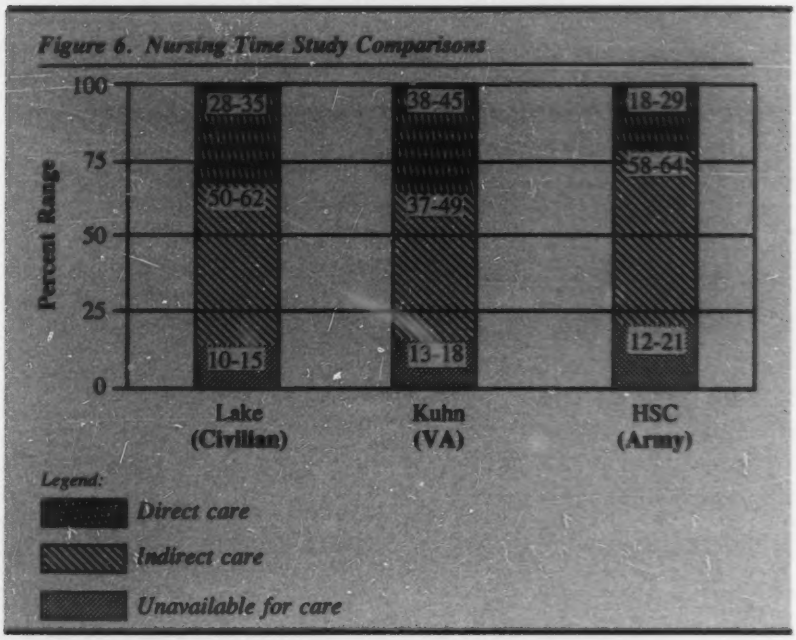
The observers collected 16.4 percent of the data on critical care units; 26.1 percent on medical/surgical units; 11.5 percent on psychiatric units; 14.9 percent on obstetric units, 14.2 percent on newborn units, and 16.8 percent on pediatric units.

Across all sites and services, nursing personnel spent 60.5 percent of their time providing indirect care and 24.5 percent providing direct care. They were unavailable for care 15 percent of the time.

In terms of indirect care time, the individual site means varied no more than 4.1 percentage points from the composite mean (see Figure 1). The findings for direct care times varied more. Direct care percentages by facility ranged from a high of 29.2 percent to a low of 18.7 percent. The range of unavailable-for-care percentages was from 21.2 percent to 11.9 percent. Facilities with higher registered-nurse-to-nonprofessional-staff ratios also had higher proportions of time spent providing direct care.

The percentage of direct care provided was highest for the newborn/neonatal intensive care unit and critical care units and lowest for the obstetrical service (see Figure 2). Indirect care requirements were highest for obstetrics and lowest for the newborn services (see Figure 3). The percentage of time nursing personnel were unavailable for care ranged from 16.7 percent for the medical-surgical units to 13 percent on the critical care units (see Figure 4).

The percentage of time spent providing direct care varied from a composite mean of 24.5 percent to a high of 30.3 percent on the evening shift (see Table 1). Nursing personnel working on the night shift have fewer



off-the-ward duties, so the time spent unavailable for care was dramatically lower for them than for staff on the day shift.

We also analyzed the percentages of time spent across all nine sites and all six services combined (see Figure 5). Unavailable-for-care time is represented by the personal and off-unit activity segments of the chart.

When we examined the 11 tasks by each category of care provider, we discovered that head nurses spent 14.5 percent of their time providing direct patient care. Only 2 percent of the time all providers spent was devoted to housekeeping. Even on the obstetrical services, with their high cleaning requirements between deliveries, nurses only spent 3.1 percent of their time doing housekeeping.

Charting and clerical activities consumed 11 percent of the overall time; travel and transportation took 10.7 percent. The overall percentage of time spent waiting to provide care was 8.7 percent. Head nurses spent only 1.6 percent of their time waiting to render care; licensed practical nurses and aides spent approximately 13 percent of their time waiting.

When we look at time spent in indirect care activities as a whole, we get a clearer picture of the individual tasks compared among themselves. For example, communicating, charting and doing clerical work, and administrative functions accounted for almost 50 percent of the indirect care time; travel and transportation consumed 17.7 percent of this time. Registered nurses excluding head nurses spent 24.9 percent of their time charting and doing clerical work, while ward clerks spent only 33.7 percent of their time on those activities.

Determining how nursing service personnel at nine Army facilities with varying bed configurations and missions spent their time revealed that the percentages of times spent providing nursing care in Army hospitals do not differ substantially from those reported in civilian hospitals, considering that working definitions and categories are slightly different (see Figure 6). The percentage of time spent providing direct care reported in this study is lower because of our more stringent definition of direct care. For example, if we had included travel and transportation and equipment set-up and tear-down in the direct-care category, the agreement among the categories in the Lake and Kuhn studies and our own would have been closer. However, our definition conformed to Sherrod's, who defined direct care as only "bedside-to-bedside" tasks.

Our findings for the direct care category were not as consistent as those for the indirect care category. Time spent unavailable to provide care appeared to be the factor that chipped away most from time available to provide direct care. When enlisted soldiers made up a high percentage of the staff, off-unit time increased. Furthermore, when the number of registered nurses was a higher percentage of the total staff, the amount of direct care increased.

The data indicated that waiting-to-provide-care time increased as a function of the number of ancillary providers. This may have been due to nonregistered nurse personnel being unable to perform tasks, being unable to recognize what had to be done, or lacking motivation. Similarly, we might question whether head nurses spent too much time providing direct care unless, while doing so, they were also teaching, supervising, and motivating other staff members.

The findings of this study coupled with patient classification studies such as Sherrod's allow us to examine closely manpower requirements for nursing personnel throughout the Army. However, it is important to remember that as direct care requirements increase, it is not necessarily true that indirect care and unavailable-for-care requirements will decrease linearly. We measured only what is, not what should be. We did not attempt to measure quality of care, only quantities of time spent.

Our findings and those of Sherrod and her colleagues formed the basis for developing a new patient classification system now in use by the Army and the Navy. Because of their reliability and validity, these studies are having significant impact on policy decisions.

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Alcohol Use and Burnout among Student Nurses

MARY R. HAACK

In recent years, researchers have been paying increasing amounts of attention to the problem of impaired health care professionals. In 1982, the American Nurse's Association (ANA) House of Delegates passed a resolution that called for establishing programs to help and intervene with nurses whose functioning is impaired because they misuse alcohol and other drugs or because they have emotional and psychological dysfunctions. The ANA resolution also called for collecting and disseminating information about impaired nurses [1]. Although scholars and practitioners have commonly discussed impairment in terms of alcoholism or drug addiction, the phenomenon is complex and includes other distinct and related dysfunctions. Burnout is a response to occupational stress that can also seriously impair professional functioning. To determine how much damage burnout can do, I explored how it relates to patterns of alcohol use among potential practitioners—student nurses.

Although citizens in all Western societies use alcoholic beverages, consumption varies greatly from person to person depending on individual preferences and social norms. United States survey data suggest that one-third of American adults abstain or seldom drink; another third have up to three drinks per week; and the remaining third have four or more drinks per week. Experts have defined about one-third of the latter groups as problem drinkers. Clark and Midanik have estimated that more than 10 million adults 18 years of age and older, or about 11 percent of the adult population, consume about half of all alcohol beverages sold [2]. Several researchers have shown that most college students use alcohol. Blane and Hewitt summarized the findings of 44 surveys conducted between 1971 and 1978 and reported that approximately 88 percent of collegians drink—89 percent of the men and 48 percent of the women [3].

More recently, Weschler and McFadden surveyed New England college students and found that less than 5 percent of them abstained from alcohol and that a majority drank weekly or more often. About 70 percent of the men and about 50 percent of the women reported drinking at least once a week. Men consumed significantly higher quantities of alcohol on a typical occasion than did women [4].

The consistency in the finding of differences in drinking behaviors between men and women in both college and non-college studies suggests that drinking may be associated with traditional sex roles—with traditional ideas about what constitutes appropriate and distinctive behaviors for men and women. Wilsnack and Wilsnack noted that changes in sex-role behavior have also brought about an increase in drinking among women, particularly among young women [5]. The proportion of college women who drink at least occasionally increased from 61 percent in 1949 and 1952 to 73 percent in the early 1970s [6,7]. These changes have led experts to speculate that the increased drinking may be a consequence of the women's movement and subsequent changes in traditional feminine roles and behaviors [8].

Alcohol Use among Nurses

Few researchers have investigated the drinking patterns of student nurses [9-11]. Since nursing draws almost exclusively on the young female population, it is conceivable that the proportion of abstainers among the women entering this profession of traditional feminine roles may be higher than among college women in general. Traditionally, females have either not consumed alcohol at all or have consumed significantly less than males have [12].

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On the other hand, Wright pointed out that, of the 1.5 million practicing nurses in the U. S. in 1982, experts estimated that 75,000 of them were alcohol dependent [13].

However, there are no empirical data on the prevalence of alcoholism among nurses. In view of the experts' estimates, studying the drinking practices of student nurses can provide a background of important etiologic data.

Recently, Haack and Harford studied student nurses in a senior class of a college of nursing and found that nursing students have adopted a pattern of alcohol comsumption comparable to that of other female collegiate students. The majority of the student nurses indicated that they used alcohol regularly, and 13 percent reported alcohol-related problems either at school or at work [14].

Burnout

Other investigators have shown that health professionals employed in jobs that demand intense contact with human suffering and crises are particularly vulnerable to the burnout syndrome. According to Maslach, burnout is a job-stress syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with people [15]. Burnout symptoms are responses to the chronic emotional strain of dealing with others, particularly those who are experiencing a life crisis. Thus, the experts consider them specific types of occupational stresses [16].

Stress is a disruption of homeostasis as a result of external or internal events that disturb the normal flow of an individual's life [17]. It is not necessarily negative or undesirable, but an individual must be able to feel in control of the stressful events [18,19]. Abramson, Seligman, and Teasdale postulate that, confronted with an uncontrollable outcome, individuals attribute its cause to something outside of their control and develop symptoms of helplessness and inability to cope. According to this model of learned helplessness, individuals who feel in control despite negative events do not show symptoms of helplessness or inability to cope [20]. Although burnout has some of the same deleterious effects as other stress responses, what is unique about it is that the stress arises from the interaction between helper and client or from the interaction between helper and the environment. In nursing, this type of stress is unavoidable. The unique response of a nurse to being involved with suffering people may depend on such organizational factors as support of superiors and a work environment that allows the nurse to control his or her work load responsibilities [21]. Such self-care strategies as regular exercise, meditation, or psychological withdrawal may also influence a nurse's ability to cope with occupational stress [22].

Negative responses to the occupational stress in nursing can cause burnout. Symptoms include gradually losing a sense of caring about clients; talking about emotional exhaustion; losing positive feelings, sympathy, and respect for clients; seeing clients cynically; blaming clients for their illness; increasing the use of alcohol and other drugs; talking negatively about oneself; and having conflicts at home [23]. Experts often cite an increase in alcohol and prescription drug use as a negative coping strategy for dealing with burnout [24,25]. Although several researchers report a relationship between burnout and alcohol consumption, the nature of that relationship is not clear. Moderate alcohol use might relieve stress, but there is always the danger of dependence.

Although it seems unlikely that nursing students would experience burnout syndrome at such an early stage in their professional development, Kramer and Baker have shown that one-third of newly graduated nurses leave the field within the first two years of practice [26]. Therefore, I thought it would be valuable to investigate how burnout relates to alcohol use among student nurses.

The subjects for this study were sophomore, junior, and senior students enrolled full-time in a school of nursing. Three percent of the subjects were 19 years of age, 16 percent were 20, 22 percent were 21, 46 percent were between 22 and 25, and 13 percent were 26 or older. Eighty percent of the students were unmarried, and 79 percent were Caucasian. I determined students' social class status based on their fathers' occupations—35 percent were professionals, 30 percent had white-collar jobs, and 35 percent had blue-collar jobs. Sixty percent of the students' fathers had some college background and 51 percent of their mothers did. Of the total student population of 367 students, 279 participated in the study by completing the Staff Burnout Scale for Health Professionals (SBS-HP), which is a 30-item inventory Jones developed to provide a valid and reliable measure of the burnout syndrome defined by Maslach and Pines [27,28]. Twenty items measure the burnout syndrome and 10 items form a lie scale. I modified some of the items slightly to include school work as well as clinical work.

The SBS-HP assesses adverse cognitive, affective, behavioral, and psychophysiological reactions that make up the burnout syndrome. Although it yields one total burnout score, Jones found that it has four factors: a 7-item general *dissatisfaction with work* factor; a 7-item *psychological/interpersonal tension* factor; a 3-item *physical illness and distress* factor; and a 3-item *unprofessional patient relationships* factor [29].

Questions on the use of alcohol include the number of drinking days in the past month and in the past week and the total number of drinks consumed in the past week by type of beverage. Two items assess whether drinking has interfered with the subject's schoolwork, job, or both.

Results

Six percent of the subjects indicated that they were abstainers, and 11 percent reported that they drank infrequently and had not used alcohol in the past month. Twenty-three percent reported drinking in the past month but not in the past week, and 32 percent report drinking two or more days in the past week.

Eighty-three percent of the subjects reported using alcohol within the past month. Although the proportion of abstainers in my study—6 percent—is similar to the 4 percent Weschler and McFadden reported finding among New England college women, more of my subjects reported frequent drinking. Forty-six percent of the women Weschler and McFadden queried and 34 percent of my subjects drank less than weekly. Fifty percent of Weschler and McFadden's subjects and 60 percent of mine drank one or two times a week or more [30].

Approximately 12 percent of my subjects reported that alcohol interfered with school work; 7 percent said it interfered with their jobs. Thirteen respondents reported problems both at school and at work. Overall, 14 percent of the students had one or both problems.

Burnout

Scores on the SBS-HP can range from 20, which indicates no burnout, to 140, which indicates severe burnout. The mean score for my study was 62.8, which is similar to those reported in other studies of practicing professional nurses and other health professions [31]. According to Jones, the mean score for nurses employed in hospitals is 52.9, and the mean for speciality nurses such as emergency room nurses is 62.6 [32]. This finding suggests that health professionals in training are not immune to the burnout syndrome. The nature and quality of burnout in the students may differ from those of practicing professionals and require further study.

Alcohol and Burnout

An analysis of variance of the SBS-HP total scores by drinker category yielded significant differences among the students. Students who reported drinking two or more times in the past week had a mean burnout score of 66.4; abstainers' mean score was 60.6; and infrequent drinkers had a mean score of 56.

To relate the level of burnout to alcohol use, I divided the SBS-HP scores into quartiles to form four burnout groups and performed an analysis of a variance with the drinking measures (see Table 1). Student nurses in the high burnout group reported more frequent drinking and higher consumption levels than did students in lower burnout groups. Drinking amounts in the past week and burnout scores were similar for wine, beer, and liquor. The relationships between drinking frequency, drinking quantity, and burnout were consistent for the use of alcohol in the past month and past week, indicating an overall relationship between drinking practices and burnout.

Total burnout scores also correlated significantly with alcohol problems. High burnout scores were related to problems both at school and at work. Further study using repeated measures will help determine the stability of these findings over time. Researchers should also explore the use of other mood-altering substances.

Discussion

These findings show that the student nurses queried consumed alcohol in a pattern consistent with other college students. The majority of them reported using alcohol, and they associated the onset of drinking with entering college. Fourteen percent of the subjects reported alcohol had interfered with school or work, which suggests abusive drinking. Although alcohol use is a normal part of college life, it is not without risk.

Some university educators and administrators have responded to drinking problems on campus by offering prevention and intervention programs. Recognizing that moralistic and authoritarian approaches that stress abstinence do not work, educators have developed programs that encourage responsible drinking. The most successful programs are designed to educate students about alcohol and the relationship between alcohol consumption and negative consequences; combat the nothing-to-do-but-drink syndrome by providing attractive alternatives for recreation; counsel and treat students who have drinking problems; intervene by confronting students who have problems and make certain that they get help [33].

After evaluating a university alcohol education program that involved showing a film and discussing values clarification, Engs reported that the program increased students' knowledge about alcohol but did not influence their drinking behaviors [34]. Other investigators report that education can change drinking behaviors [35,36]. Gardiner, Wilsnack, and Slotnick did a study with medical students and determined that increased faculty support reduced student alcohol consumption [37]. These studies suggest that it is possible to modify drinking behaviors among students through prevention programs.

Although nurse educators advocate prevention as part of the practice of nursing, they teach very little about preventing illness and dysfunction

*Table 1. Summary of Analysis of Variance of Drinking Variables by Burnout Groups**

	Burnout Groups			
Drinking Frequency	**1**	**2**	**3**	**4**
Number of days past month	2.7	4.0	4.4	6.4
Number of days past week	7.8	.90	1.1	1.6
Drinking Quantity	**1**	**2**	**3**	**4**
Number of drinks past month	9.4	9.5	10.8	18.2
Number of drinks past week	2.5	1.9	3.1	5.5
Number beer past week	1.2	.8	1.4	2.4
Number wine past week	.5	.7	.9	1.4
Number liquor past week	.83	.46	.79	1.7

**Any two means not underscored by the same line are significantly different*

among nurses. Student nurses learn the pharmacological solutions to almost every health problem, which is consistent with present trends in medical and psychiatric treatment, but which creates the danger that students will incorporate a chemical solution into managing their own physical or psychological pain. Studies indicate that nurses tend to view themselves as helpers, not as recipients of help, and that they believe their knowledge protects them from illness, which may enhance the risk that they will use alcohol as a coping mechanism [38,39].

More than half of the student nurses I surveyed scored in the high range of burnout. There appeared to be some relationship between heavier drinking and high burnout, although the direction of this relationship is unclear. The presence of high burnout scores implies that these students feel depleted and callous toward their patients. If they use alcohol as a way to cope with these feelings, the consequences can be destructive.

The occurrence of burnout syndrome at such an early stage of professional development suggests the need for burnout intervention in undergraduate programs. Researchers should look into what interventions would be most effective as well as how and when burnout begins.

Experts on burnout suggest that five aspects of professional training programs contribute to burnout: they tend to create unrealistic expectations; the curricula are not practical enough; they do not train students sufficiently in interpersonal skills; they do not provide adequate knowledge of how to function in bureaucratic organizations; and they do not teach professionals how to cope with uncertainty, change, conflict, stress, and burnout [40].

We cannot expect that changing curricula to accommodate material on the problem areas would have a long-range effect. Information does not prevent burnout. Talented teachers who are coping with clinical issues can be powerful role models, and doing so is a better teaching method than providing information. Teaching students about the effectiveness of a support system as a deterrent to burnout and developing programs for the secondary development of students with drinking problems are also important [41-45]. These interventions require further study as well.

I have demonstrated that nursing students are at risk for dysfunctions such as burnout and alcohol abuse, which can lead to impaired professional practice. Preventing and treating burnout and alcohol abuse among student nurses will benefit the profession.

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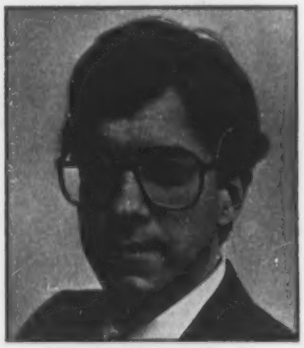

Show of Support Needed Now for Nursing Appropriations

By Kevin L. Morrissey
Director of Communications, NLN

Nursing education and research appropriations for fiscal year 1988 are now under consideration on Capitol Hill, and a show of support from nurses around the country is needed to back up the case for increased funding being made in Congress by the Nursing Tri-Council (NLN, the American Association of Colleges of Nursing, the American Nurses' Association, and the American Organization of Nurse Executives).

As was reported in this column in February, President Reagan has once again called for eliminating federal funding of nursing education in his FY88 budget. Despite the inclusion of this same proposal in the administration's FY87 budget, nursing was successful in generating congressional support and ultimately garnering $53.3 million for nursing education.

Visits over the last several weeks by representatives of Nursing Tri-Council organizations with members of the Senate and House appropriations committees and other key legislators demonstrate little inclination on Capitol Hill to accept the President's recommendation, especially in light of the growing evidence that we are in the throes of a critical national nursing shortage of unprecedented dimensions.

Confronted with recent American Hospital Association data showing that hospital RN vacancies doubled last year, NLN data indicating an ongoing nose dive in enrollments, and banner newspaper headlines across the country heralding the shortage, legislators are justifiably nervous about the impact on health care services for their constituents.

And looking at supply and demand projections for the remainder of the century, all indicators point toward the most serious problem in the areas of advanced and specialized preparation that are the focus of current federal funding programs. Federal projections indicate that the supply of baccalaureate nursing graduates will be about half the demand in the year 2000, and that the supply of graduate-prepared nurses at the turn of the century will be only one-third of the demand.

At press time, hearings schedules in the approriations committees have not yet been confirmed, but we expect to present testimony in the House later this month and in the Senate early in May. For FY88 nursing education funding, the Nursing Tri-Council is recommending appropriation of the full $56.6 million authorized under the Nurse Education Act, as illustrated by line item in the table below.

For nursing research programs, the imperative is to achieve sufficient and necessary funding for the new National Center for Nursing Research at the National Institutes of Health, establishment of which represented a major victory for the nursing community.

The President—who twice vetoed legislation to establish a nursing research entity at NIH—included $17.5 million for nursing research in his budget, representing a decrease from the $19 million appropriated in FY87. Based upon the recommendations of supporters on congressional appropriations committees, the Nursing Tri-Council will request $25 million for FY88 nursing research appropriations.

Nursing Education and Research Appropriations

Nursing Education	FY87	President's FY88 Budget Request	Tri-Council FY88 Budget Request
Advanced Nurse Education	$16,750,000	$0	$17,500,000
Nurse Practitioners	12,000,000	0	12,000,000
Special Projects	9,500,000	0	9,500,000
Traineeships	11,750,000	0	13,000,000
Nurse Anesthetists	800,000	0	800,000
Demonstration Projects	1,675,000	0	2,700,000
Faculty Fellowships	825,000	0	1,100,000
TOTAL	$53,300,000	$0	$56,600,000
Nursing Research	$19,000,000	$17,500,000	$25,000,000
Grand Total	$72,300,000	$17,500,000	$81,600,000

Write Your Legislators Now

To ensure adequate funding of nursing education and research in the coming fiscal year, it is of crucial importance that you write your U.S. senators and representatives as soon as possible—and urge your colleagues to do so as well—urging support of FY88 appropriations of $81.6 million for nursing education and research.

Nursing Tri-Council testimony by itself is not enough. Despite a generally receptive mood on Capitol Hill, we are in a period of serious budget constraints and looming federal deficits. It is important that all members of Congress, and most especially those who sit on appropriations committees, hear from constituents in their home states. It is particularly helpful if you can illustrate how nursing education funding is supporting schools and students in their own districts, how their constituents stand to benefit from nursing research, and how the reduction of federal support would affect nurses and consumers in their home states. Please contact this office if you need any assistance in identifying your legislators or determining the committees on which they serve.

Urge Attendance at June Capitol Hill Reception

When you contact your senators and representatives regarding appropriations, please urge them as well to attend the congressional reception on Capitol Hill that NLN is hosting in conjunction with the upcoming biennial convention in Washington, D.C. This event will take place on Wednesday evening, June 17, from 5:30 to 7:30 p.m. in the Rayburn House Office Building. Make sure that your legislators know that you and hundreds of your colleagues from their district are looking forward to seeing them there. And please plan to remind them of this event before you leave for the convention, and call their Capitol Hill offices as soon as you arrive in Washington. The reception will provide a unique opportunity for you and your colleagues to discuss with your legislators the numerous pressing legislative issues on the table in the 100th Congress.

Are your home health aides providing safe patient care?
NLN can help you find out!

The Home Health Aide Skills Assessment Test

Early hospital discharges, coupled with an increase in the elderly population, have placed new demands on home care agencies. In this environment the quality of patient care is often under fire.

Are you confident that your home health aides have the basic knowledge needed to provide safe and effective home care? The National League for Nursing's *Home Health Aide Skills Assessment Test* is a valid and reliable way to help you find out.

It can provide a sound basis for your training program, while giving you a solid measure of performance. This 60-item multiple choice test measures the home health aide's ability to apply the basic principles needed for safe patient care.

Test content evaluates knowledge in such content areas as

- role and function
- meeting basic patient needs
- disease prevention
- patient safety including transfers
- caring for patients with special needs

Administered in only one hour, this test—which can be scored immediately—can save you time and money in training and supervising home health aides.

Send to: Margery Garbin, Director, NLN Test Service, National League for Nursing, 10 Columbus Circle, New York, NY 10019

☐ Yes! I want my home health aides to provide safe patient care. Please send me more information.

Name _____

Title _____

Agency _____

Address _____

City _____ State _____ Zip _____